





***Please read this manual thoroughly before use.
Retain this manual for future reference.***

Taikan Optical Fiber MDU Node Owner's Manual

This manual is intended for use by purchasers of Taikan's family of optical fiber MDU nodes and their qualified technicians. This document is the property of Taikan Company Inc. ("Taikan") and embodies proprietary subject matter. All design, manufacture, reproduction, use and sale rights regarding these products are expressly reserved. This manual may not be reproduced without written consent from Taikan. All copyright, patent and trade secrets for this manual and products are expressly reserved by Taikan. Specifications are also subject to change without notice.

SAFETY PRECAUTIONS



Please be cognizant of all safety guidelines and adhere to the recommendations listed.

- > Read the user manual carefully before proceeding with any part of the product.
- > Installation and operation of the product must be performed only by qualified personnel and always in accordance with applicable electrical codes.
- > Unplug the product from the power outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth. For the optical connector, it is recommended that you use Greenlee Communications' 948 fiber connector cleaner.
- > Do not block or cover openings. These are provided for ventilation and protection from overheating. The maximum operating temperature is 50°C (122°F).
- > This product should be operated only from the type of power sources indicated on the marking label.
- > This product may be equipped with a polarized AC line plug (i.e. a plug having one blade wider than the other or a different shape). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug into the outlet, try reversing the plug. Contact your electrician to replace the obsolete outlet if this still does not work. Do not compromise the safety purpose of the polarized plug.
- > For added protection during a lightning storm or when the equipment is left unattended or unused for long periods, unplug it from the power outlet and disconnect the cables between the equipment and the fiber subsystem. These precautions will prevent damage to the equipment that could be caused by lightning strikes or power line surges.
- > Do not attempt to service this equipment yourself as opening or removing the cover may expose you to dangerous voltages or other hazards. Refer all servicing to Taikan. A Taikan representative can be reached at support@taikan.com or call 1-800-255-0247.
- > Notify a Taikan representative at support@taikan.com if any parts need to be replaced.
- > Unauthorized alteration or inappropriate repair is NOT allowed and may cause irreparable damage to product. Taikan does not assume any responsibility for these modifications.

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SECTION ONE

// INTRODUCTION



PRODUCT SUMMARY

Taikan's OFMN Series is a high powered optical node designed for MDU or large facilities that are implementing FTTx and RFoG networks. These MDU nodes are offered at 1 GHz and are available in a wide array of return transmitters and band splits.

The OFMN is available in a WDM single fiber port version or a more economical dual port version. Each unit includes a separate power adapter that will adhere to the local requirements and a built-in LED to indicate power, optical input and transmit status.

STANDARD FEATURES

- Low Power Consumption
- Available WDM Technology
- High RF Power Output
- Compact Aluminum Alloy Housing
- External Input and Test Ports
- 1310, 1550 or ITU CWDM Return Transmitter Options

NOMINAL SPECIFICATIONS

Optical Receiver Feature

Optical Wavelength	1200-1600 nm	
Input Optical Power	-6 dBm	2 dBm
Optical Power Test Point	1 ± 0.2 V/mW	
State Green	≥ -6 dBm	
State Red	≤ -6 dBm	

General

Operating Temperature	-30 °C to 50 °C (-22 °F to 122 °F)
Power Supply	15 VDC 200 mA
Surge Withstand	6KV, 8/20 us combo wave 3kA 100 kHz ring wave 200A
Dimensions	213 x 125 x 82 mm (8.4 x 4.9 x 3.2 in.)
RF Ports	"F" Type, 75 Ohms
Optical Connector Type	SC / APC (FC / APC also available)

Optical Transmitter Feature

Output Wavelength	1310, 1550 *1430, 1450, 1470, 1490, 1530, 1570, 1590 and 1610 nm *(available for DFB Laser & CWDM Options)
Output Optical Power	2 mW
Optical Return Loss	-
Optical Power Test Point	1 V/mW
State Green	laser operating
State Red	output power < 50%

SECTION TWO

// UNPACKING

UNPACKING

Carefully open the package and adhere to all safety guidelines outlined in the safety section. Check the packaging material for the following components.

- > OFMN Optical Fiber MDU Node
- > User Manual
- > Power Adapter

It is highly recommended that the cover be left on the optical connector until you are ready to install the optical node at the client’s premises. Not complying could “pollute” the connector thereby compromising the transmission quality.

The side effects include:

- > Decrease in analog signal transmission quality
- > Increased incorrect data rate for the digital signal
- > Decrease in optical power
- > Compromise of optical receiver’s optical power
- > Pollution of the other optical components

Please notify your Taikan representative (support@taikan.com) if any of the items appear lost or damaged.

STATIC SENSITIVITY

When opening or operating the product, please comply with standard static protection procedures, such as using a grounding metal wrist belt, grounding work top and grounding conductor. Adhering to these guidelines will minimize the risk of damaging the product.

SECTION THREE

// INSTALLATION

MDU NODE PLACEMENT

The Optical Fiber MDU Node is designed to fit in a cabinet mounted on the exterior of a client’s premises.

It is recommended that the MDU node be placed in an environment that maintains a temperature of approximately 25° C (77°F).

GROUND CONNECTION

The Optical Fiber MDU Node should have good grounding with a resistance < 4 Ohm. According to international standards, the 220 V plug-in adopts tri-wire rule, while the middle wire is the grounding wire.

To ground the Optical Fiber MDU Node, insert a #6 - #14 gauge grounding wire to the grounding contact at the bottom of the unit. Secure it in place by tightening the seizure screw with a #2 Philips head screwdriver. When using the DC input power supply, the equipment chassis must be grounded.

NOTE TO CATV SYSTEM INSTALLERS: This reminder is provided to call your attention to NEC Articles 810- 21, 820-22, and 820-40 that provide guidelines for proper grounding. In particular, these articles specify that the cable ground shall be connected to the building grounding system, as close to the point of cable entry as practical.

ELECTRICAL CONNECTION

To power the Optical Fiber MDU Node, prepare a length of coaxial cable with a male F-type connector at each end. Connect the power supply included with the MDU Optical node to the PWR in the side port.

When attaching the power supply, make sure to adhere to all standard safety practices. Plug the wall adapter into a power outlet. The PWR on light will be lit when the power supply is successfully connected.

RF CONNECTION

Connect the RF cable and the connector on the Optical Fiber MDU Node’s RF output port. The RF Connector is a F type plug with a resistance of 75 Ohm.

OPTICAL CONNECTION

Connect the output fiber optic jumper to the proper input connector socket. The connector type is SC/APC.

SECTION FOUR

// OPERATION & TROUBLE SHOOTING

FORWARD PATH SETUP

1. Configure the MDU Node’s downstream path by selecting the appropriate downstream pad and equalizer. Prior to doing so, a 15 dB equalizer will set it up with the appropriate tilt. Use the forward path test point to verify the output level. Note that it will be 20 dB below the actual output level.

RETURN PATH SETUP

1. The ideal RF input level is a few dB below the peak of the NPR and input level curve. This is the optimal location since it allows for changes in the input power while simultaneously places the total level outside of the clipping region and thermal noise area.
2. Remember to measure the RF levels by using the Reverse test Points. Note that it will be 20 dB below the actual signal level. The test point is positioned before the reverse pad location so please take this into account during the measurement process.

LED INDICATOR

- > The working status indicator (LED) will be lit when the unit is operating correctly.
- > The LED status is indicated below:
- > Light is green: Laser operation is OK
- > Light is red: Laser output is below 50%

TROUBLE SHOOTING

- > If the signal within the client’s premises is scrambled or otherwise unclear, detach the SC/APC connections and clean per manual instructions. Reconnect, then power on the unit.
- > If the LED is not lit, check all connections and wiring between electrical socket and optical node unit.

SECTION FIVE

// RETURN & WARRANTY

PRODUCT RETURN PROCEDURE

- Follow these steps if you need to return the product for repair:
1. Contact a Taikan Representative at support@taikan.com to obtain a Return Authorization Number.
2. When sending back the product for repair please include the following information:

> Return Authorization Number

> Model Number

> Serial Number

> Reason for Return
3. Prior to repairing the device, we will inform you about the test results and any additional repair charges that may apply (in the event the damage was caused by improper handling/ care). Once we have received your confirmation we will proceed with the repair.
4. The repair period will depend on the severity of the problem.
5. The product will still be under warranty after it is returned. The repair component is covered for 90 days after you have received the product. (see below)

STANDARD TAIKAN PRODUCT WARRANTY

Taikan Company Inc. provides a Limited 1 year Warranty (“Warranty”) to original purchaser on its product against manufacturing defect and workmanship under normal use and service. Taikan Company Inc. will, during the Warranty period, repair or replace the product to correct defects in material and workmanship. (Please note, fiber products carry a limited 3 year warranty) 1 year parts and 2 years labor.

This Warranty shall not apply to a product which has been altered in any way so as to effect its stability or durability, nor which has been subject to misuse or negligence. This Warranty does not cover a product which has been damaged by severe weather conditions such as extreme wind, ice, storms, lightning, or other natural weather conditions over which Taikan Company Inc. has no control.

Claimants under this Warranty shall present their claim along with the defective product to Taikan Company Inc. Non-compliance with any part of this claim procedure may invalidate this Warranty in whole or in part.

This Warranty is expressly in lieu of all other agreements and warranties, expressed or implied.